
Environmental Benefits of Cool Roofs

According to the California Energy Commission, cool roofs have the following environmental benefits:

- Reduced energy bills
- Reduced size of air conditioning unit
- Increased comfort
- Longer roof life
- Urban heat island mitigation

Cool roofs can cut building owners' energy costs. Because cool roofs gain less heat than standard roofs, they reduce the need for air conditioning, making buildings more comfortable for the people inside. And, a smaller tonnage A/C unit may be sufficient, resulting in lower capital costs.

Combined with attic insulation, cool roofs can conserve even more energy

For building owners, cool roofs can cut maintenance costs and increase the life expectancy of the roof.

And for the community in general, cool roofs can help to reduce the urban heat island effect that makes urban areas hotter and increases air pollution.

The Sustainable Burbank Task Force would like you to know:

Installing a cool roof on your home can help mitigate the Urban Heat Island Effect, which can increase summer temperatures by 4 to 7 F degrees in the day and up to 22 degrees at night.

Using the energy modeling software HEED, a 1,000 square foot house in Burbank was analyzed. Comparing a black roof (Solar Reflectance 0.05) with a roof that has a Solar Reflectance of 0.25, homeowners can save money on their energy bills depending on the level of attic insulation.

Generally, the lighter the color of the roof, the greater the solar reflectance and cooler the roof will be. New technology allows production of cool shingles in mid-range colors that still reflect solar radiation. Although shingles with the special granule cost more, they are typically offered with premium shingles that have a longer warranty period. Consult with a roof supplier on product life expectancy.

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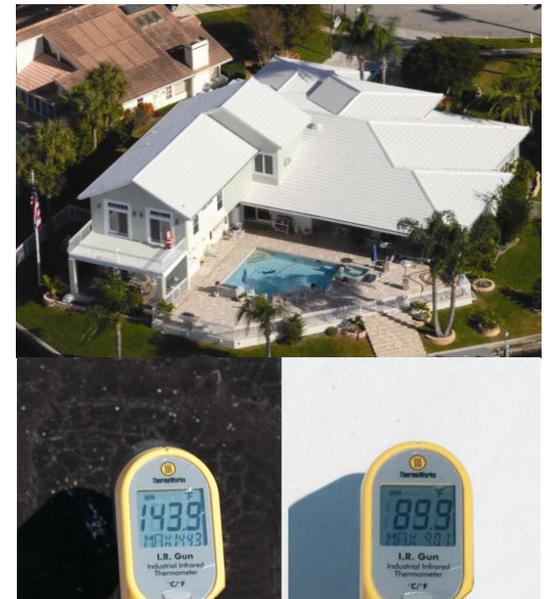
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CITY OF BURBANK

Community Development Department
Building Division

Voluntary Residential Cool Roof Program



Be Cool!

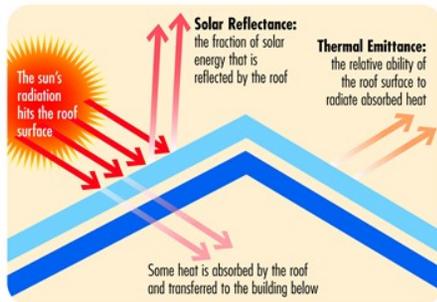
What is a Cool Roof in Simple Terms

In simple terms, what is a Cool Roof?

- A roof surface that stays relatively “cool” compared to other coverings.
- Cool roof shingles tend to be white or lighter in color than standard asphalt shingles, but a wider variety of colors has become available in recent years.
- Cool roofs are highly reflective, highly emissive roofing materials that stay 50 to 60 degrees F cooler than a standard roof under a hot summer sun.

What do the cool roof terms mean?

- **Solar Reflectance:** The measure of the portion of light reflected.
- **Thermal Emittance:** The measure of the portion of absorbed heat re-emitted to the atmosphere.
- **Solar Reflectance Index:** A new value that combines both of the above.
- All ratings are measured from 0 to 1. A higher value is cooler. Both are important, although reflectance has the greater effect.



This diagram from the Cool Roof Rating Council illustrates the effects of the sun's energy on a roof.

CHOOSING A ROOF

Although the city cannot recommend specific roofing products, below are a couple of features to consider when selecting a roof covering.

Most cool roof materials for low-sloped roofs are white, but manufacturers have developed shingles in other popular colors.

Shingled roofs consist of overlapping panels. Fiberglass asphalt shingles, the most common type, are coated with granules. Cool asphalt shingles use specially coated granules that provide better solar reflectance. Coating existing asphalt shingles to make them cool is not approved by manufacturers.

RESIDENTIAL ROOF PERMIT REFUND PILOT PROGRAM

From April 1 through September 30, 2011, homeowners who complete installation of a cool asphalt shingle may qualify for a refund of their roof permit fee. The shingle must have a Solar Reflectance value of 0.25 or greater in order to qualify. Rating information is available from the manufacturer or the Cool Roof Rating Council www.coolroofs.org. Receipts or other documentation showing that the qualifying shingle was purchased may be submitted with the permit application. All work must be completed and documentation must be turned in

during the 6-month period of the pilot program. After the roof has been inspected and the permit is finalized, a refund can be issued to the applicant.

The fee for a roof permit is \$7 per 100 square feet of roofing. The permit fee for a 1,000 square foot roof would be \$70, for example.

BUILDING CODES

Because cool roofs save both money and energy, in October 2005 they became part of the prescriptive requirements of California's energy code, the Title 24 Building Energy Efficiency Standards.

Different requirements exist partly based on the slope of the building's roof. In Burbank's climate zone, residential roof materials must comply with mandatory Energy Code requirements if the slope is above 2:12 and the selected roof cover weighs 5 lbs or more per square foot, typically clay or slate tiles. The Aged Solar Reflectance value shall be a minimum of 0.15 and the Thermal Emittance a minimum 0.75. Or, a Solar Reflectance Index of at least 10 may be used to qualify.

Building permits are required for all re-roofs. Only one overlay on top of the original shingles is permitted, and wood shakes or shingles are prohibited. Please contact Building Division for assistance with specific permit questions at 818-238-5220.